

INFRARED DETECTOR WITH AMORPHOUS SILICON  
DETECTOR ELEMENTS, AND A METHOD OF MAKING IT

ABSTRACT OF THE DISCLOSURE

5 An infrared detector (10) includes a substrate (16)  
having thereon an array of detector elements (21, 139).  
Each detector element has a membrane (41, 81, 91, 111,  
141), which includes an amorphous silicon layer (51, 142)  
in contact with at least two electrodes (53, 56-57, 92,  
112-113, 143-145) that are made of a titanium/aluminum  
alloy which absorbs infrared radiation. In order to obtain  
a desired temperature coefficient of resistance (TCR), the  
10 amorphous silicon layer may optionally be doped. The  
effective resistance between the electrodes is set to a  
desired value by appropriate configuration of the  
electrodes and the amorphous silicon layer. The membrane  
includes two outer layers (61-62, 146-147) made of an  
15 insulating material. Openings (149) may optionally be  
provided through the membrane.